

Species Diversity, 2006, 11, 339–346

## A New Species of the Genus *Prionomysis* (Crustacea: Mysida: Mysidae) from the Okinawa Islands, Southwestern Japan

Kouki Fukuoka

*Ishigaki Tropical Station, Seikai National Fisheries Research Institute, 148-446 Fukai-Ohta,  
Ishigaki, Okinawa, 907-0451 Japan  
E-mail: fukuokak@fra.affrc.go.jp*

(Received 19 March 2006; Accepted 18 August 2006)

*Prionomysis ryukyuensis* sp. nov. is described from the shallow waters of Yagaji Island, Okinawa Islands, in the central Ryukyus of southwestern Japan. This species differs from the other three hitherto described species of *Prionomysis* Tattersall, 1922 in having a single long seta on the distal end of the exopod of the fourth male pleopod. It is furthermore distinguishable from two of its congeners, *P. aspera* Ii, 1937 and *P. australiensis* Murano, 1990, by the shorter antennal scale.

**Key Words:** Mysida, Leptomysini, *Prionomysis*, new species, Ryukyus, Okinawa, Japan.

### Introduction

The genus *Prionomysis* Tattersall, 1922 belongs to the tribe Leptomysini (subfamily Mysinae) and is characterized by the telson having an apical cleft with a naked margin, and a pair of plumose setae arising from the anterior end of the cleft. This genus currently comprises three species: *P. stenolepis* Tattersall, 1922, which has been recorded from the Andaman Islands (Tattersall 1922), *P. aspera* Ii, 1937, from Japan (Ii 1937) and China (Liu and Wang 1986), and *P. australiensis* Murano, 1990, from northern Australia (Murano 1990).

During an ecological survey of sergestid shrimps in the coastal waters of southwestern Japan, an undescribed species belonging to *Prionomysis* was found in the shallow waters of Yagaji Island, Okinawa Islands, in the central Ryukyus. In this paper, a description and illustrations of this new species of *Prionomysis* are provided.

The body length was measured from the tip of the rostrum to the posterior end of the telson, excluding spines. The type specimens are deposited in the National Science Museum, Tokyo (NSMT).

### Taxonomy

***Prionomysis ryukyuensis* sp. nov.**  
(Figs 1–3)

**Material examined.** Holotype: NSMT-Cr 16765, male (9.8 mm), dissected,

northern beach of Yagaji Island, Okinawa Islands, Japan, 20 April 2004, 0.5 m deep, hand-net by diver, coll. K. Fukuoka. Paratypes: NSMT-Cr 16766, 1 female (9.6 mm), dissected, same data as holotype; NSMT-Cr 16767, 11 males (8.3–9.7 mm) and 13 females (8.2–10.6 mm), same data as holotype.

**Description.** Body robust. Integument partially hispid. Thoracic somites without sternal processes. First to fifth abdominal somites subequal in length; sixth somite 1.5–1.7 times as long as fifth.

Carapace (Fig. 1A, B) anteriorly produced into triangular rostral plate reaching proximal third to half of first segment of antennular peduncle, lateral margins of rostrum concave; anterolateral corners rounded; posterior margin emarginate, exposing posterior 2 thoracic somites dorsally.

Eyes (Fig. 1A, B) large, 1.2–1.3 times as long as broad; cornea almost globular, occupying distal 0.4–0.5 of eye.

Antennular peduncle of male (Fig. 1A) more robust than that of female; third segment as long as first segment in male, half as long as first in female (Fig. 1B), with well developed appendix masculina.

Antennal scale (Fig. 1A–D) elongate, narrowly lanceolate with rounded apex, armed with spiniform plumose setae along entire margin, 10 times as long as broad, extending beyond apex of antennular peduncle by 0.3 of its length in male and by 0.4 in female, with suture near apex. Antennal peduncle (Fig. 1C, D) extending to proximal 0.4 of scale in male and 0.35 in female. Antennal sympod (Fig. 1C, D) with spiniform process at lateral distal angle.

Labrum wider than long, frontal margin produced into small, triangular process in ventral view.

Mandibular palp (Fig. 1E) with second segment armed with numerous setae on mesial and lateral margins; third segment half as long as second.

Mesial lobe of maxillule (Fig. 1F) armed with 2 long, robust setae, 1 robust, plumose seta, and 1 or 2 slender setae on distal margin, and 2 or 3 slender setae on lateral margin. Lateral lobe of maxillule (Fig. 1F) expanded outwards in proximal half, armed with 8 or 9 robust spines on distal margin and 2 plumose setae on ventral surface.

Maxilla (Fig. 1G) with second segment of endopod 2.1–2.4 times as long as broad, without spines on margin; exopod extending to distal 0.2 of first segment of endopod.

Endopod of first thoracopod (Fig. 1H) robust; dactylus with robust terminal claw. Endopod of second thoracopod (Fig. 1I) with stout claw on end of dactylus. Endopod of third to eighth thoracopods (Fig. 2A–C) long, its carpopropodus divided into 3 subsegments by transverse articulations: proximal subsegment longest, occupying 0.4–0.5 of total carpopropodus length; middle subsegment shortest, 0.7–0.9 times as long as distal subsegment. Thoracopodal exopod (Figs 1H, 2B, C) with flagellum 8-segmented in first and eighth pairs and 9-segmented in second to seventh pairs.

Penis (Fig. 2D) armed with 10 mesially curved setae on distal margin of lateral lobe and 8 short plumose setae on posterolateral margin.

Female with reduced oostegites on sixth thoracopods and developed oostegites on seventh and eighth thoracopods.

All pleopods of male (Fig. 3A–E) developed, biramous. First pleopod (Fig. 3A) with endopod reduced to unsegmented lobe, exopod 7-segmented. Second, third,

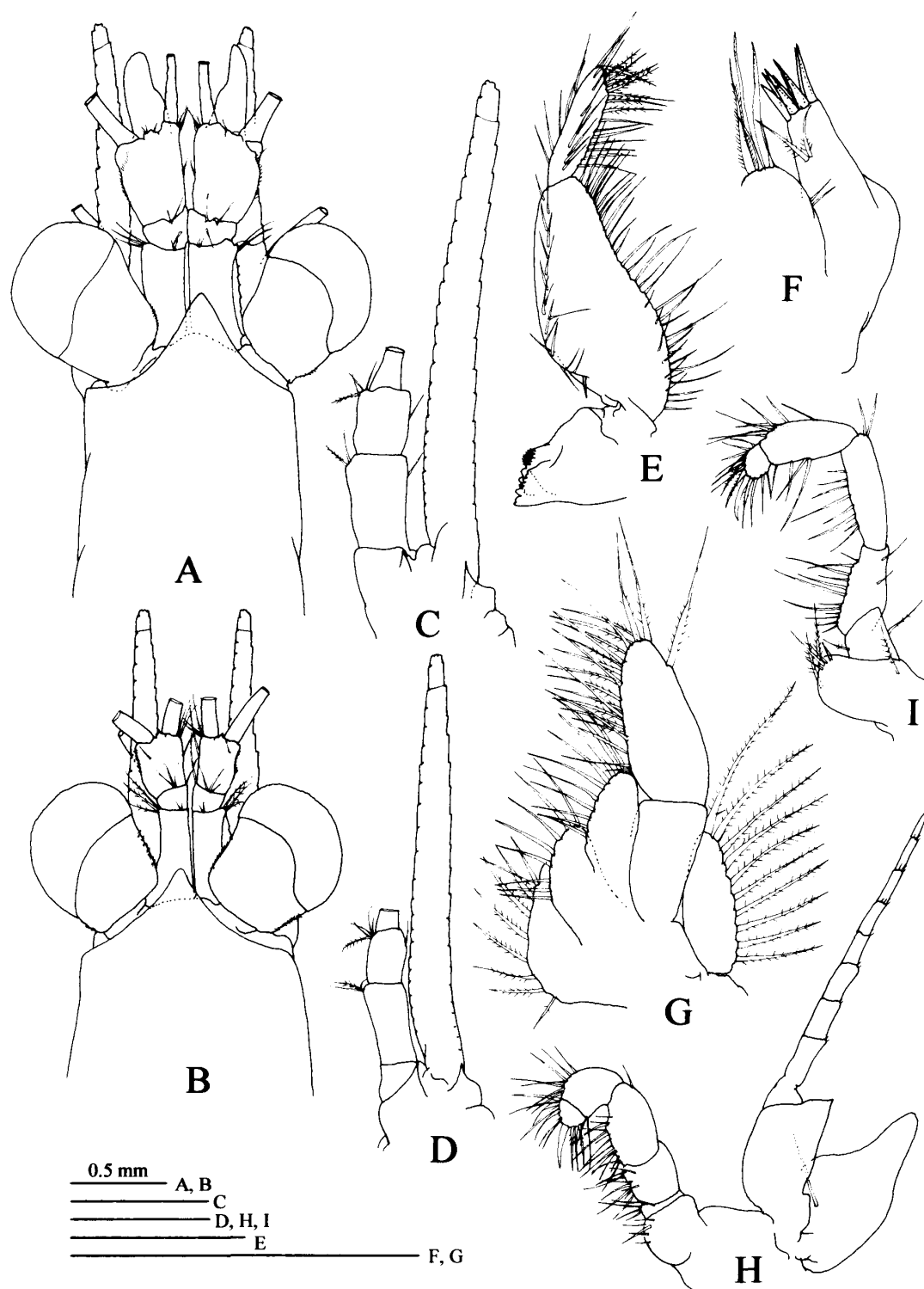


Fig. 1. *Prionomysis ryukyuensis* sp. nov. A, C, E-I, Male (9.8 mm), holotype, NSMT-Cr 16765; B, D, female (9.6 mm), paratype, NSMT-Cr 16766. A, B, Anterior part of body, dorsal; C, D, left antenna, ventral; E, left mandible, posterior; F, left maxillule, posterior; G, left maxilla, posterior; H, first thoracopod, posterior; I, endopod of second thoracopod, posterior.

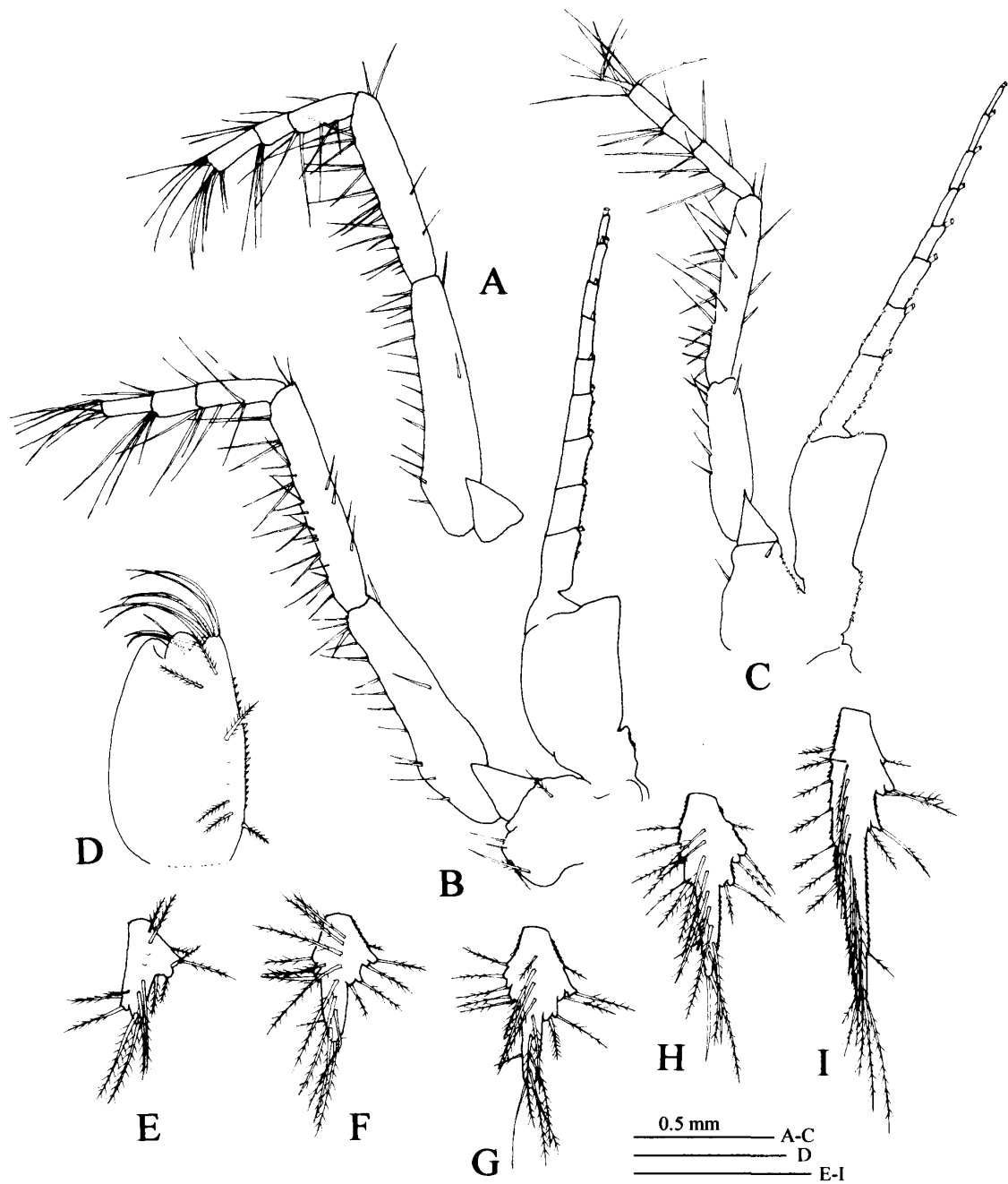


Fig. 2. *Prionomysis ryukyuensis* sp. nov. A–D, Male (9.8 mm), holotype, NSMT-Cr 16765; E–I, female (9.6 mm), paratype, NSMT-Cr 16766. A, Endopod of left third thoracopod, posterior; B, left fifth thoracopod, posterior; C, left eighth thoracopod, posterior; D, left penis, posterior; E–I, left first to fifth pleopods, anterior.

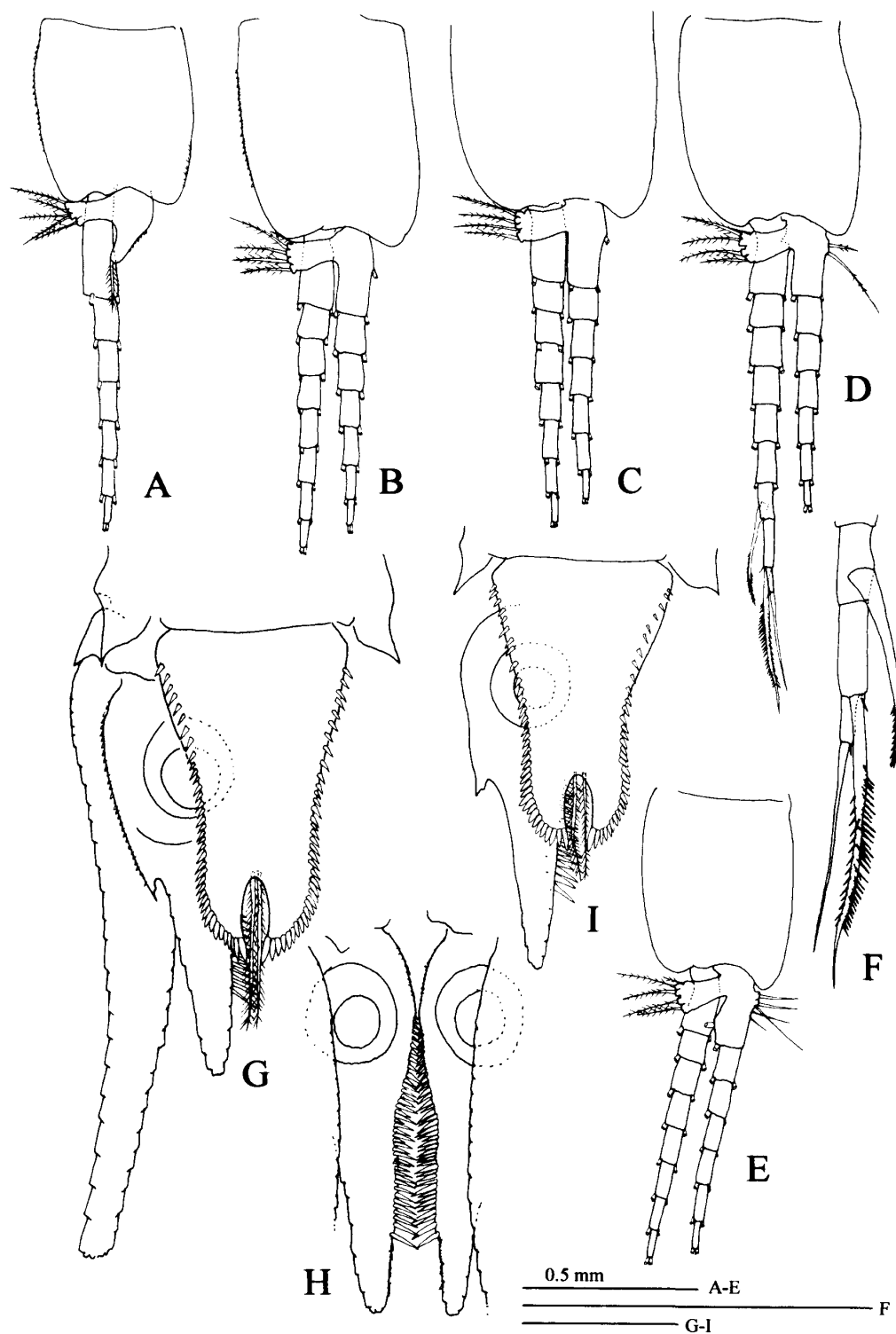


Fig. 3. *Prionomysis ryukyuensis* sp. nov. A-H, Male (9.8 mm), holotype, NSMT-Cr 16765; I, female (9.6 mm), paratype, NSMT-Cr 16766. A-E, Left first to fifth pleopods, anterior; F, distal part of exopod of left fourth pleopod, anterior; G, uropod and telson, dorsal; H, uropodal endopods, ventral; I, uropodal endopod and telson, dorsal.

and fifth pleopods (Fig. 3B, C, E) each with 7-segmented endopod, and 8-segmented exopod longer than endopod. Fourth pleopodal endopod (Fig. 3D) 7-segmented, exopod (Fig. 3D, F) 9-segmented, longer than endopod, its antepenultimate segment armed with 1 long, robust, mesially curved, spiniform seta arising from near distal end and extending beyond distal end of exopod; penultimate segment 1.3 times longer than preceding one, armed on distal end with long, robust, spiniform seta, this extending beyond tip of terminal seta and being barbed on distal 0.7 except distal 0.25 naked; ultimate segment half as long as preceding segment, armed with tiny seta and long, naked, spiniform seta 5 times longer than own segment. Pseudo-branchial lobe (Fig. 3A–E) rectangular.

All pleopods of female (Fig. 2E–I) reduced to unsegmented lobes, gradually increasing in length towards posterior pair, fifth pleopod 1.5 times as long as fourth pleopod.

Uropodal endopod (Fig. 3G–I) extending beyond posterior end of telson by 0.35–0.40 of its length, with spiniform process on middle of lateral margin, armed on mesial ventral margin from statocyst region to distal 0.2 with 38–43 spines, these becoming larger distally with irregular arrangement in middle part. Uropodal exopod (Fig. 3G) 1.4 times as long as endopod, slightly curved laterally.

Telson (Fig. 3G, I) with apical cleft, 0.8 times as long as sixth abdominal somite, 1.6–1.7 times as long as maximum width; apical lobes gradually narrowing posteriorly. Lateral margin of telson (Fig. 3G, I) armed throughout with 30–40 spines; spines on posterior 0.3 somewhat flattened distally. Apical cleft (Fig. 3G, I) occupying 0.2 of telson length, its lateral margins smooth and concave; pair of long, plumose setae arising from just in front of anterior end of cleft.

**Etymology.** The specific name is derived from the type locality, the Ryukyus.

**Ecological note.** In the daytime, this species forms flat swarms and swims close to the sandy bottom.

**Remarks.** *Prionomysis ryukyuensis* differs from other species of *Prionomysis* in the setation of the fourth male pleopod, which has a single long, stout seta on the distal end of the exopod; in contrast, the other species have two long setae (Table 1).

*Prionomysis ryukyuensis* resembles *P. aspera* and *P. australiensis* in the more or less hispid body, shape of the antennal scale, arrangement of spines on the uropodal endopod, and shape of the telson (Table 1); however, *P. ryukyuensis* is distinguishable from these other two species by the length of the antennal scale. The scale extends beyond the apex of the antennular peduncle by 0.3 of its length in the male and 0.4 of in the female in *P. ryukyuensis*, compared to 0.4 in the male and 0.5 in the female in the other two species. *Prionomysis ryukyuensis* is also distinct from *P. australiensis* in the length of the penultimate segment of the exopod of the fourth male pleopod. In *P. ryukyuensis*, this segment is 1.3 times longer than the preceding segment whereas in *P. australiensis* the two segments are equal in length.

### Acknowledgements

I thank Dr. Masaaki Murano for reviewing the manuscript. This study was partially supported by a Grant-in-Aid for JSPS Fellows from the Ministry of Educa-

Table 1. Comparison of characters in the four species of *Prionomysis*.

	<i>P. aspera</i> Ii, 1937	<i>P. australiensis</i> Murano, 1990	<i>P. stenolepis</i> Tattersall, 1922	<i>P. ryukyuensis</i> sp. nov.
Body surface	hispid	weakly hispid	(no information)	partially hispid
Apex of rostrum	narrowly rounded, extending slightly beyond base of antennular peduncle	narrowly rounded, extending slightly beyond base of antennular peduncle	pointed, extending to middle of proximal segment of antennular peduncle	narrowly rounded, extending to near middle of proximal segment of antennular peduncle
Antennal scale	11 times as long as broad	10 times as long as broad curiously twisted	13 times as long as broad,	10 times as long as broad
Strong seta on penultimate segment of exopod of 4th male pleopod	extending beyond tip of terminal seta	extending to near tip of long terminal seta	extending to near tip of long terminal seta	extending beyond tip of terminal seta
Distal end of exopod of 4th male pleopod	with 2 long, unequal setae	with 2 long, unequal setae	with 2 long, unequal setae	with 1 long and 1 tiny setae
Uropodal endopod	with spines from statocyst region to distal 1/5	with spines from statocyst region to distal 1/4	with spines from statocyst region to distal 1/13	with spines from statocyst region to distal 1/5
Apical lobes of telson	gradually narrowing posteriorly	gradually narrowing posteriorly	more or less parallel	gradually narrowing posteriorly

tion, Culture, Sports, Science and Technology of Japan.

### References

- Ii, N. 1937. Studies on Japanese Mysidacea. III. Descriptions of four new species belonging to tribes, Leptomysini and Erythropini. *Japanese Journal of Zoology* 7: 191–209.
- Liu, R. and Wang, S. 1986. Studies on Mysinae (Crustacea Mysidacea) of the northern South China Sea. *Studia Marina Sinica* 26: 159–202. [In Chinese with English abstract]
- Murano, M. 1990. Three new leptomysids (Mysidacea) from northern Australia. *Crustaceana* 59: 231–244.
- Tattersall, W. M. 1922. Indian Mysidacea. *Records of the Indian Museum* 24: 445–504.